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Market Administrator's *Hubert W. LeRoy* Bulletin

MARKET ADMINISTRATOR

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"Cool-Headed" Cows Give More Milk, USDA Research Shows

Cows that keep "cool heads" during long, hot summers give more milk than cows that do not, a U.S. Department of Agriculture study shows.

In tests, cows gave 15 to 20 percent more milk when their heads and necks were held in enclosures cooled to 60 degrees F. than when they were housed in an 85 degree F. barn. This study of how various temperatures affect milk production in hot climates was conducted by agricultural engineer G. LeRoy Hahn of USDA's Agricultural Research Service, in cooperation with the University of Missouri, Columbia.

Previous ARS research shows that cool, pleasant environments benefit milk production. Most dairymen hesitate to air condition their barns, however, because of high installation, operating, and maintenance costs.

Reduced cost is the main advantage from cooling only cows' heads and

necks to reduce milk production losses in hot weather. It is less expensive to cool a relatively small enclosure than to air condition an entire barn. And cooling only the air within the enclosure presents no dust, odor, or ammonia accumulation problems—as are associated with recirculated air—since ventilating fans can operate normally in the rest of the barn.

Mr. Hahn became interested in this alternative to total air conditioning after learning that "zone" or "snout" cooling had increased hog production. His tests were carried out in the Missouri Climatic Laboratory on the University campus.

To measure the effects on milk production of cooling cows' heads and necks and providing them with cool air to breathe, Mr. Hahn first determined milk production levels of 10 Holstein cows by placing them in a room cooled to 65 degrees. He then

confined the cows with their heads and necks in individual air-conditioned enclosures. Temperatures within the enclosures could be varied from that of the room. During all tests, room temperature was 85 degrees.

By regulating the temperature in the enclosures, the engineer learned that:

When cows breathed air warmed to room temperatures—85 degrees—milk production declined to 75 percent of what it was in the 65 degree environment.

When cows breathed air cooled to 60 degrees, milk production was 91 percent of normal.

The study's purpose was to increase milk production at a time when the number of milk cows in the United States is decreasing and the population is growing. It is a part of ARS' continuing effort to find more efficient ways of producing food and fiber.



Columbus

MARKET FACTS FOR EASY REFERENCE

PRICE SUMMARY

Producers' Uniform Price (3.5%)	\$5.52	\$5.51	\$5.80
Class I (3.5%)	5.50	5.50	5.79
Class II (3.5%)	3.91	3.91	3.99
Producer Butterfat Differential for each one-tenth percent	9.0¢	9.1¢	9.5¢

UTILIZATION SUMMARY

Percent of Producer Milk in Class I	86.2	85.2	86.8
Percent of Producer Butterfat in Class I	76.4	78.0	79.1
Percent of Producer Milk in Class II	13.8	14.8	13.2
Percent of Producer Butterfat in Class II	23.6	22.0	20.9

PRODUCER MILK RECEIPTS

Total Pounds Producer Milk Delivered	43,424,707	43,425,367	40,934,182
Average Daily Class I Producer Milk	1,257,208	1,202,960	1,246,719
Total Number of Producers	1,650	1,577	1,497
Average Daily Receipts per Producer	877	888	912
Average Butterfat Test	3.92	3.79	3.87
Total Value of Producer Milk at Test	\$2,428,781	\$2,378,499	\$2,393,975
Income per Producer (7 Day Average)	\$343	\$340	\$373

GROSS CLASS USE (Pounds)

Class I Skim	36,115,711	35,698,311	34,297,466
Class I Butterfat	1,299,084	1,283,005	1,253,858
Class I Milk	37,414,795	36,981,316	35,551,324
Class II Skim	5,607,602	6,082,537	5,051,871
Class II Butterfat	402,310	361,514	330,985
Class II Milk	6,009,912	6,444,051	5,382,856

AVERAGE DAILY SALES (Quarts)

Milk	414,844	421,444	429,938
Buttermilk	4,814	4,937	5,369
Chocolate	31,280	32,394	30,534
Skim	11,398	11,476	11,758
Cream	7,198	6,771	8,174

COMPARATIVE STATISTICS



COLUMBUS MARKETING AREA



NOV., 1958 - '67

Year	Receipts From Producers	Average Butter-fat Test	Percentage of Producer Milk in Each Class				Uniform Producer Price (3.5%)	Class Prices at 3.5%				Number of Producers	Daily Average Production
			Class I	Class II	Class III	Class IV		Class I	Class II	Class III	Class IV		
1958	23,091,764	3.89	88.1	7.9	1.3	2.7	4.37	4.434	4.034	3.934	2.887	1,729	445
1959	25,350,698	4.00	90.6	6.6	1.3	1.5	5.11	4.696	4.296	3.927	3.228	1,693	499
1960	27,083,211	3.94	85.9	6.7	1.5	5.9	4.94	4.611	4.211	4.004	3.135	1,566	577
1961	29,409,401	3.91	82.2	6.7	2.2	8.9	4.77	4.505	4.105	3.876	3.250	1,312	747
1962	34,279,707	3.89	78.4	6.4	2.4	12.8	4.50	4.28	3.861	3.665	3.039	1,336	855
1963	36,416,781	3.86	83.0	7.3	2.0	7.7	4.73	4.46	4.044	3.736	3.084	1,369	887
1964	42,429,124	3.86	84.2	15.8	—	—	4.70	4.62	3.29	—	—	1,686	839
1965	43,731,417	3.79	87.6	12.4	—	—	4.90	4.79	3.36	—	—	1,642	888
1966	40,934,182	3.87	86.8	13.2	—	—	5.80	5.79	3.99	—	—	1,497	912
1967	43,424,707	3.92	86.2	13.8	—	—	5.52	5.50	3.91	—	—	1,650	877

U. S. DAIRY STOCKS ABOVE 1966 LEVELS

The Dairy Situation, Economic Research Service USDA, November, 1967

Storage stocks of dairy products on October 1 were estimated at 9.5 billion pounds milk equivalent, up about 3.5 billion pounds from a year earlier. The rise has come from the increase in USDA stocks of butter and cheese to the equivalent of 4.1 billion pounds of milk, from negligible year-end holdings in 1966. Commercial stocks of dairy products were about 5.5 billion pounds milk equivalent, down from 6 billion a year earlier.

It is likely that commercial requirements and program needs will pull year-end holdings of dairy products down to around 8 billion pounds milk equivalent. Prospects indicate little change next year in marketings, a decline in imports, somewhat higher commercial disappearance, and larger CCC program utilization of dairy products. These conditions may bring 1968 year-end stocks below the 1967 figure.

Most of the increase from a year earlier in dairy product stocks is due to large CCC stocks of butter on October 1, compared with none a year earlier. Commercial holdings of butter were down about 40 percent to 38 million pounds. Production levels in 1967 are high relative to demand. This makes it possible for distributors to carry lower stocks than in 1966.

Commercial holdings of natural American cheese were 346 million pounds, about the same as a year earlier. CCC stocks are 37 million

pounds, compared with none a year earlier.

Nonfat dry milk stocks on October 1, were 267 million pounds, including 136 million pounds in manufacturer's stocks. Manufacturers were holding about 15 percent more nonfat dry milk than a year earlier, while government stocks of 131 million pounds compared with less than 1 million on October 1, 1966. During the seasonally low production period this fall, nonfat dry milk stocks likely will fall somewhat, but at year-end they are expected to be nearly double the 119 million pounds at the end of 1966.

Evaporated and condensed milk stocks have been substantially above a year earlier throughout 1967 and on October 1, were respectively 292 million pounds, up 19 percent from a year earlier, and 12 million pounds, up about 63 percent. Stocks of both of these products are likely to move closer to year earlier levels by the end of this year.

NUMBER of PRODUCERS TO DECLINE IN 1968

The Dairy Situation, Economic Research Service USDA November, 1967

The number of farmers keeping milk cows will continue to decline in 1968. The rate of decline will depend in part on opportunities for off-farm employment and income opportunities in farm enterprises alternative to dairying. Moreover, relatively large capital requirements for beginning dairy farmers and high labor costs are contributing to the decline in dairy herds.

CASH RECEIPTS RISING

The Dairy Situation, Economic Research Service, USDA November, 1967

Cash receipts from farm marketings of milk and cream are expected to approximate \$5.8 billion in 1967, up about 5 percent from last year's record \$5.5 billion level. Farm production expenses also are expected to be higher this year than last, and net incomes of dairy producers may be a little above those of 1966.

For January-September, 1967, cash receipts from dairy marketings totaled \$4.4 billion, about 7 percent above the same months of 1966. The increase was due chiefly to a 6 percent average increase in prices received by farmers, as milk marketings for this period were close to those of a year earlier.

Dairy farmers probably will market about 114.8 billion pounds of milk this year, about the same as in 1966. Marketings are being maintained this year, even with slightly lower production, because of the continued decline in milk used on farms where produced. Whole milk marketings this year may increase by almost 1 billion pounds, while marketings of farm separated cream and milk retailing by farmers continue to decline.

Average returns per 100 pounds of milk marketed in all forms likely will be slightly above \$5.00, compared with last year's \$4.81. The slight rise in marketings and little change in milk prices in prospect for 1968 point to cash receipts from dairying around this year's level, if programs continue about as they are now



CCC EXPANDS DAIRY UTILIZATION PROGRAM

The Dairy Situation, Economic Research Service
USDA, November, 1967

In 1967, USDA is expected to distribute butter and cheese equivalent to over 3½ billion pounds of milk for use in School Lunch and Welfare Programs. This compares with about 1.1 billion pounds in 1966. Distribution of butter and cheese through the School Lunch Program had stopped in 1966 when CCC supplies ran out. USDA resumed distribution of butter and cheese through the School Lunch Program last October with butter and cheese purchased under Section 709 authority at market prices, and has continued distribution with supplies purchased at support price levels.



The Market Administrator

and his Staff

Wish You A Happy

Holiday Season

Market Quotations

NOVEMBER

1967

MINNESOTA-WISCONSIN PRICE SERIES	\$4.00
Butter-nonfat dry milk price, 3.5% per cwt. (Columbus)	3.91
Average Price per lb. 92-score butter at Chicago6648
Average carlot prices, spray process nonfat dry milk, f.o.b. Chicago area manufacturing plants.1950

Utilization of Milk In Various Products

The Dairy Situation, Economic Research Service, USDA, November, 1967

In 1967, the market supply of milk available for processing and manufacture is expected to remain about the same as the 116.1 billion pounds in 1966. The market supply includes milk marketed by farmers, net imports of ingredients such as frozen cream and butterfat-sugar mixtures, and the net change in storage cream. Market supplies will likely decline slightly in 1968 due to reduced imports of butterfat-sugar mixtures.

An estimated 47 percent of milk marketed by farmers in 1967 will be used in fluid milk products. Fluid utilization is down from 1966 due to a drop in fluid milk product sales and little change in farm marketings of milk and cream.

This year all manufactured dairy products are expected to use the equivalent of 60.5 billion pounds of milk, compared with 57.9 billion pounds in 1966.

Butter and American cheese are both using more milk in 1967, but the production of other types of cheese, evaporated milk, condensed milk, and

dry whole milk are expected to be down this year. Paralleling the increase in butter production, 1967 nonfat dry milk output likely will be up from 1966.

Ice cream and other frozen desserts may use about 10½ billion pounds of milk in 1967, about the same as in 1966. Approximately 15 percent of the milk used in processing ice cream and other frozen desserts is expected to come from imports of butterfat-sugar mixtures in 1967. With imports of butterfat-sugar mixtures reduced by the recent quota action, a larger portion of 1968 milk marketings by farmers will be used in frozen desserts than in 1966 and 1967.

In 1968, about the same proportion of milk marketings will likely move into fluid uses as in 1967. Manufactured dairy products may use a smaller quantity of milk than this year, but with smaller imports of butterfat-sugar mixtures, most will come from domestically produced milk.